Amendments to the Claims:

This listing of claims will replace all prior versions, and listings, of claims in the application:

Listing of Claims:

1. (Currently amended) Coherent scatter computer tomography apparatus for examination of an object of interest, comprising:

a source of radiation;

a first radiation detector; and

a second radiation detector; wherein the source of radiation generates a radiation beam adapted to penetrate the object of interest in a fan plane and wherein the source of radiation is inclined with respect to the fan plane; wherein the coherent scatter computer tomography apparatus further comprises a collimator arranged between the source of radiation and the object of interest, wherein the collimator comprises a plurality of collimator portions that collimate the radiation beam in a direction substantially perpendicular to the fan plane, wherein the first radiation detector is arranged opposite to the source of radiation in the fane plane; wherein the first radiation detector is arranged to detect a first radiation of the collimated radiation

beam; wherein the second radiation detector is arranged opposite to the source of radiation with an offset from the fan plane in a direction normal to the fan plane; wherein the second radiation detector is arranged to detect a second radiation of the collimated radiation beam scattered from a location in the object of interest; wherein at the location, the second radiation has a dimension in the direction normal to the fan plane; wherein a scatter angle between photons of the second radiation scattered at the location along the dimension from the fan plane is constant.

2. (Previously presented) The coherent scatter computer tomography apparatus of claim 1, wherein the radiation beam is focused at a focus point by the collimator; wherein the focus point is at a distance from the source of radiation; and wherein the second radiation detector is arranged at the distance from the source of radiation.

3. (Previously presented) The coherent scatter computer tomography apparatus of claim 1, wherein the collimator is adapted to collimate the radiation beam such that the radiation beam is focused at a focus point being at the same distance form the source

of radiation as the second radiation detector.

4. (Currently amended) The coherent scatter computer tomography apparatus of claim 3, wherein the collimator comprises a first plurality of high-Z material sheets and a second plurality of tapered plastic layers sandwiched between the first plurality of high-Z material sheets, wherein each of the first plurality of high-Z material sheets and each of the second plurality of tapered plastic layers have an inclination with respect to each other of the first plurality of high-Z material sheets and other each of the second plurality of tapered plastic layers.

5. (Currently amended) The coherent scatter computer tomography apparatus of claim 3, wherein the collimator comprises a first plurality of high-Z material sheets and a second plurality of plastic layers sandwiched between the first plurality of high-Z material sheets; wherein the focusing of the radiation beam at the focus point is performed by deforming the plastic layers by applying inhomogeneous mechanical pressure onto the collimator such that each of the first plurality of high-Z material sheets and each of the second plurality of tapered plastic layers have an

inclination with respect to each other of the first plurality of high-Z material sheets and other each of the second plurality of tapered plastic layers.

6. (Original) The coherent scatter computer tomography apparatus of claim 1, wherein each of the first and second detectors comprises a line of detector elements, each of these lines being arranged in parallel to the fan plane.

7. (Currently amended) A method of examining an object of interest with a coherent scatter computer tomography apparatus, the method comprising the acts of:

generating a radiation beam penetrating the object of interest in a fan plane, wherein the radiation beam is generated as stacked collimated beams that are stacked in a direction substantially perpendicular to the fan plan and wherein a source of the radiation beam is inclined with respect to the fan plane;

detecting a first radiation of the radiation beam transmitted through the object of interest;

detecting a second radiation of the radiation beam scattered from a location in the object of interest; wherein the location has

an offset from the fan plane in a direction normal to the fan plane; wherein at the location, the second radiation has a dimension in the direction normal to the fan plane; wherein the radiation beam is generated such that a scatter angle between photons of the second radiation scattered at the location along the dimension from the fan plane is constant.

8. (Previously presented) The method of claim 7, wherein the collimated beams are focused at a focus point having the same distance from a source of radiation as a point where the second radiation is detected.

9. (Currently amended) A software program stored on a computer-readable medium for controlling a computer tomography apparatus, wherein, when the software is executed on a processor of the computer tomography apparatus, the computer tomography apparatus performs the following operation:

generating a radiation beam penetrating the object of interest in a fan plane, wherein the radiation beam is generated as stacked collimated beams that are stacked in a direction substantially perpendicular to the fan plan and wherein a source of the radiation

beam is inclined with respect to the fan plane;

detecting a first radiation of the radiation beam transmitted through the object of interest;

detecting a second radiation of the radiation beam scattered from a location in the object of interest; wherein the location has an offset from the fan plane in a direction normal to the fan plane; wherein at the location, the second radiation has a dimension in the direction normal to the fan plane; wherein the radiation beam is generated such that a scatter angle between photons of the second radiation scattered at the location along the dimension from the fan plane is constant.

10. (Previously presented) The coherent scatter computer tomography apparatus of claim 4, wherein the second plurality of tapered plastic layers form tapers that vary with respect to each other such that a beam path through one of the collimator portions varies in length with respect to another one of the collimator portions.

11. (New) The coherent scatter computer tomography apparatus of claim 1, wherein the second radiation detector is portion of a flat

radiation detector.

12. (New) The coherent scatter computer tomography apparatus of claim 1, comprising a table of reconstruction scatter functions, wherein the coherent scatter computer tomography apparatus is configured to determine a scatter function from the detected first and second radiation and is configured to compare the determined scatter function to the table of reconstruction scatter functions.

13. (New) The method of claim 7 comprising an act of providing a collimator arranged between the source of radiation and the object of interest, wherein the collimator comprises a plurality of collimator portions that inclined with respect to each other and that collimate the radiation beam in a direction substantially perpendicular to the fan plane.

14. (New) The method of claim 7, comprising an acts of:

determining a scatter function from the detected first and second radiation; and

comparing the determined scatter function to a table of reconstruction scatter functions.